

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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TITLE: METHOD AND APPARATUS FOR ANALYZING HEART RATE VARIABILITY

Preliminary Amendment: CLAIM AMENDMENTS

1. (Original) A heart rate variability analytical method, comprising the steps of:
 - capturing an electrocardiogram signal of a person;
 - performing an analog-to-digital conversion of the electrocardiogram signal;
 - selecting peaks of the electrocardiogram signal;
 - calculating a standard deviation of heights or durations of the peaks;
 - removing the peaks whose heights or durations exceed a first predetermined standard deviation;
 - performing sampling and interpolation of qualified peaks to form consecutive peak signals; and
 - performing spectrum analysis upon the consecutive peak signals in frequency domain.
2. (Original) The heart rate variability analytical method of Claim 1, wherein the first predetermined standard deviation is substantially equivalent to three standard deviations.

3. (Original) The heart rate variability analytical method of Claim 1, further comprising the step of calculating peak-to-peak intervals of the electrocardiogram signal and filtering out unqualified peak-to-peak intervals.

4. (Currently amended) The heart rate variability analytical method of Claim 3, wherein the step of filtering out unqualified peak-to-peak intervals is ~~implemented by:~~ comprised of the steps of:

calculating the standard deviation of the peak-to-peak intervals of the electrocardiogram signal; and

removing the peak-to-peak intervals that exceed a second predetermined standard deviation.

5. (Original) The heart rate variability analytical method of Claim 4, wherein the second predetermined standard deviation is substantially equivalent to three standard deviations.

6. (Original) The heart rate variability analytical method of Claim 1, wherein all the steps can be accomplished by a command inputted by a button.

7. (Original) The heart rate variability analytical method of Claim 1, further comprising a step of checking whether the sampling data is sufficient.

8. (Currently amended) The heart rate variability analytical method of Claim 1, ~~wherein~~
further comprising showing the result of the spectral analysis is shown in a display or is printed
printing out the result.

9. (Original) The heart rate variability analytical method of Claim 1, wherein the peaks are
QRS waves.

10. (Currently amended) A heart rate variability analytical apparatus, comprising:
an electrocardiogram signal detector ~~for~~ capturing electrocardiogram signals of a
person;
a signal amplifier ~~for~~ amplifying the electrocardiogram signals;
an analog-to-digital converter ~~for~~ digitizing the electrocardiogram signals;
a computer ~~for~~ calculating, filtering and analyzing the digitized electrocardiogram
signals; and
a digital input/output device connected to the computer ~~for~~ acting as a user-machine
communication interface of the heart rate variability analytical apparatus.

11. (Original) The heart rate variability analytical apparatus of Claim 10, wherein the digital
input/output device is connected to a button for driving the computer to calculate, filter and analyze
the digitized electrocardiogram signals.

12. (Original) The heart rate variability analytical apparatus of Claim 10, wherein the signal amplifier, analog-to-digital converter, computer and digital input/output device are installed in a case.

13. (Original) The heart rate variability analytical apparatus of Claim 10, further comprising at least one indicator connected to the digital input/output device for showing the status.

14. (Original) The heart rate variability analytical apparatus of Claim 10, further comprising a display connected to the computer.

15. (Original) The heart rate variability analytical apparatus of Claim 10, further comprising a printer connected to the computer.

16. (Currently amended) The heart rate variability analytical apparatus of Claim 10, wherein the electrocardiogram signal detector is ~~constituted~~ comprised of at least two electrodes.